As a result of the Commission's uncertainty, there is no definition for ATPC in Part 101 and there are no provisions permitting its use in the rules governing antennas or transmitter power. This indecision is unnecessary and is potentially harmful.

Permitting fixed point-to-point microwave carriers to use ATPC is not something new. The ATPC concept was developed by AT&T and has been used successfully for years by common carriers under Part 21.

When ATPC is employed, the station is licensed for the maximum transmitter power it ever will use. Under normal circumstances, the actual transmitter power actually is several dB less. The transmit power is raised to the maximum allowed power only when necessary. This practice is consistent with the Commission's requirement that users employ only the minimum power needed to achieve acceptable service.[43] ATPC is a very powerful concept, which significantly enhances frequency reuse in the lower microwave frequency bands. Under TIA's Bulletin 10-F restrictions, the time period when ATPC is used is quite limited.

Given the Commission's commitment to improving spectral efficiency, it must permit ATPC to be used by both CC and POFS microwave licensees. Contrary to its approach in ET Docket No. 92-9 "that ATPC is permitted up to a 3 dB increase in power,"[44] if ATPC is authorized, the only allowance that the Commission needs to make is for transmitters to be operated at less than their authorized power. Thus, if use of ATPC is permitted, there is no basis for the Commission's concerns regarding the impact of ATPC on its forms, licenses and data base.

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[43]47 C.F.R. Sections 21.107(a) and 94.73(a) (1993).

[44]Second Report and Order, 8 FCC Rcd at 6519 (emphasis added).

C. Transmitter Power Values Must Be Revised.

The Commission proposes general transmitter power limitations in Section 101.113:

> In addition to merging the transmitter power table from Parts 21 and 94, we also propose to eliminate the values for maximum allowable transmitter power, while retaining the values for Equivalent Isotropic Radiated Power (EIRP). See proposed Section 101.113. We are proposing to allow a maximum EIRP of + 55 dBW for all point-to-point microwave bands from 4 GHz to 40 GHz, to allow for increased path reliability on long paths and to set a common standard for all bands. See proposed Section 101.113. This proposal is based partly on TIA recommendations. Comsearch also proposed a maximum allowable EIRP of +55 dBW in an earlier proceeding. Comsearch points out that in Part 25 of the Rules, the terrestrial station EIRP used to determine frequency coordination distance in the 4, 6, and 11 GHz bands is +55 dBW, which corresponds with the International Telecommunications (ITU) Radio Rules and Regulations. The Commission decided not to act on that portion of Comsearch's petition, instead deferring consideration of maximum authorized power, antenna standards, and ATPC to a future proceeding. We seek comment on whether increasing the transmitter power limitations as proposed would have any negative impact on radio users.[45]

The values in Section 101.113 incorporate TIA's proposal, except that: (i) the specified maximum allowable EIRP must be per polarization instead of the proposed EIRP per frequency; and (ii) ATPC must be expressly permitted. Thus, TIA and NSMA support adoption of Section 101.113, with the revisions identified in Appendix A.[46]

Transmitter power limitations -- TIA proposed adopting the Section 94.73 provisions for transmitter power limitations because these rules are more comprehensive than the Section 21.107 rules. However, TIA also proposed including the Section 21.107 language regarding resolution of harmful interference. In response to a suggestion by Commission

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[45] NPRM at para. 17 (footnotes omitted).

[46] Certain values in the table of transmitter power limitations, for the 2110-2180 MHz bands, also are revised in Appendix A.

staff, TIA proposed that the Table of transmitter power limitations should not show the values for maximum allowable transmitter power and only should show the values for EIRP.

In the table of maximum allowable EIRP, with limited exception, TIA proposed a maximum EIRP of +55 dbW for all point-to-point microwave bands from 4 GHz to 40 GHz. In the Second Report and Order, the current EIRP standards from Section 21.107 and Section 94.73 are retained in each band.[47] However, these standards are inconsistent. The EIRP standard for the 5,925-6,425 MHz and 17,700-19,700 MHz bands is +55 dbW. The EIRP standard for the 6,525-6,875 MHz, 10,550-10,680 MHz, and 10,700-11,700 MHz bands is +50 dbW. The EIRP standard for the 23 and 38 GHz bands is +50 dbW in Part 21 and +40 dbW in Part 94.

TIA recommended that a common EIRP standard of +55 dbW be applied to point-to-point bands starting at 3.7 GHz. The transmit power of state-of-the-art digital microwave radios is typically 1 to 5 watts for the 4, 6, 10, and 11 GHz bands. In the 4 and 6 GHz bands, antennas ranging from 6 to 15 feet in diameter are available. In the 10 and 11 GHz bands, antennas from 2 to 12 feet are available. The following table shows typical EIRPs, assuming a 5 watt transmit power and 100 feet of waveguide in each band:

[47] Second Report and Order, 8 FCC Rcd at 6519.

Frequency Band (GHz)	Transmit Power (dBm)	Antenna Size (feet)	Antenna Gain (dBi)	Waveguide Loss (dB)	Calculated EIRP (dBW)
4.0	+37	15	42.7	0.8	48.9
6.1	+37	15	46.4	1.2	52.2
6.7	+37	15	47.1	1.4	52.7
10.5	+37	12	49.3	3.2	53.2
11.2	+37	12	49.8	3.1	53.7

As shown in the table, the +50 dBW EIRP standard cannot be achieved in most frequency bands without reducing antenna sizes. Consequently, the +50 dBW EIRP standard will impact adversely reliability on long paths, where large antennas are required.

In addition, microwave users will prefer the lower 6 GHz band over the upper 6 GHz band, since higher power is allowed in the lower 6 GHz band. This will contribute to an imbalanced use of the frequency bands. Setting a common +55 dBW EIRP standard will prevent these problems.

The EIRP standard is also a concern at 18, 23, and 38 GHz, due to the higher susceptibility of these frequency bands to rain outage and atmospheric absorption loss. The current EIRP standard is +55 dBW for the 18 GHz band. The standard is lower for the 23 and 38 GHz bands. TIA proposed that the same EIRP standard should be set for 18, 23, and 38 GHz bands to allow higher power and to improve path reliability. However, no changes in EIRP standards were proposed for the 12.2-13.25 GHz and 18.6-18.8 GHz bands.

The use of a +55 dBw EIRP standard is not unprecedented. For example, this same standard also is used in Part 25 of the Commission's Rules for determining terrestrial station

frequency coordination distances in the 4, 6 and 11 GHz bands. In addition, this EIRP standard is in Title II, Appendix 28 of the ITU Rules and Regulations.

The Commission proposes adoption of these TIA recommendations. Thus, TIA and NSMA support the power limitations specified in proposed Section 101.113.

ATPC -- As discussed above, this rule is necessary to ensure that licensees using ATPC and licensees not using ATPC operate at a permissible power level. A licensee using ATPC has the flexibility to deviate downward from its licensed power level. However, it must be made clear in the rules that licensees not using ATPC must operate as near as practicable to their authorized power level.

Polarization -- TIA proposed that the transmitter power levels be "per polarization." The Commission did not include this proposal in the NPRM. This omission must be rectified because current practice is that either or both polarizations may be used on a given path. The transmit power is necessary to achieve the requisite grade of service for a single transmitter/receiver pair.

D. Path Length Equation Must Be Revised.

In Section 101.143, the formula for determining minimum path lengths is specified. For path lengths shorter than those specified therein, the EIRP may not exceed the value derived from an equation in Section 101.143(b).

This rule for determining path lengths must be made applicable to both POFS and CC users, and it must be revised to include the formula for shorter paths set forth in Appendix A. This formula is appropriate because it provides a more graduated reduction of power at the transmitter point and because it is based upon input from frequency

coordinators. In addition, use of this formula must be mandatory, not discretionary, as the Commission proposes.

With the ET Docket No. 92-9 modifications, text was added to the Commission's Rules to allow ATPC to be used to meet the EIRP limitation (based on path length) with up to a 3 dB increase. Because the accepted industry procedure is to license the maximum transmitter power for ATPC systems, this rule would force the Commission to determine whether a path used ATPC in order to find out if it complied with the EIRP limitation. This 3 dB allowance should be deleted to simplify the Commission's responsibility.

E. Station Record Keeping Requirements Must Be Retained.

Under Section 94.113, a licensee is required to maintain station logs concerning its compliance with tower lighting and operation requirements. In the NPRM, such record keeping requirements would be eliminated.

TIA and NSMA oppose this approach. Station records are needed to ensure that power, frequency and other critical equipment parameters are within proper specifications and to assist in correcting any problems that might develop. Thus, TIA and NSMA recommend that the station record keeping requirements from Part 94 be included in Part 101, as set forth in Appendix A.[48]

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[48]In Section 101.211, the Commission proposes the operator requirements for POFS licensees. Comparable requirements for CC licensees are not proposed. TIA and NSMA consider these requirements to be important. Thus, they propose that Section 101.211 be revised to cover both POFS and CC licensees and to reflect that individual operator licenses no longer are issued. See Appendix A.

CONCLUSION

TIA and NSMA fully agree with the Commission that consolidating Parts 21 and 94 into a "user friendly" Part 101 is in the public interest. To ensure that this revision, in fact, meets this goal, the technical rule proposals discussed herein must be adopted.

These proposals reflect the strong consensus of the fixed point-to-point microwave industry. Adoption of these rules would guarantee that fixed point-to-point microwave users, manufacturers, and coordinators are provided the necessary flexibility and certainty to continue serving the public interest.

Respectfully submitted,

NATIONAL SPECTRUM MANAGERS ASSOCIATION, INC.

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APPENDIX A

TEXT OF PROPOSED REVISIONS

Following is the text of suggested revisions by TIA and NSMA to selected proposed Part 101 rules. To ensure that these suggested revisions are clear, TIA and NSMA, herein, list all Part 101 rules from the NPRM. If no change to the NPRM text is proposed, it is so noted. If deletion and/or relocation of the entire rule is proposed, it is so noted. If a change is proposed, the entire text of the rule is included as set forth in the NPRM, and it is marked to show the changes that TIA and NSMA propose.[1]

I. GENERAL REVISIONS TO SUBPARTS C, H AND I.

The following general revisions to Subparts C, H and I are proposed:

- All technical rules in Subparts H and I are deleted.
- Subpart C is amended to add new Section 101.147 for frequency assignments (which merges Sections 101.605 and 101.703) and to add Section 101.723 (special requirements for operation in the 38,600-40,000 MHz band) and re-number it to Section 101.149.
- Subpart H is amended to delete Sections 101.605 (frequency assignments), 101.607 (bandwidth) and 101.609 (standards for pre-1977 equipment).
- Subpart I is amended to delete Sections 101.703 (frequencies), 101.705 (transmitter power), 101.707 (bandwidth and emission), 101.709 (modulation), 101.713 (supplementary application showing), 101.715 (temporary authorization), 101.717 (temporary authorization), and 101.721 (channel loading). Subpart I also is amended to re-number Section 101.711 (permissible communications) to Section 101.703, and Section 101.719 (license renewal) to Section 101.705.
- Former Section 101.713 is integrated into Section 101.21; and former Sections 101.715 and 101.717 are integrated into Section 101.31.

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[1]Appendix A also has been provided on computer disk to the Commission.

- The titles for Subparts H and I are amended and renamed to describe accurately the services involved.

SUBPART C TECHNICAL STANDARDS	SUBPART H PRIVATE OPERATIONAL FIXED POINT-TO-POINT MICROWAVE SERVICE	SUBPART I COMMON CARRIER FIXED POINT-TO-POINT MICROWAVE SERVICE
101.101 - Frequency availability	101.601 - Eligibility	101.701 - Eligibility
101.103 - Frequency coordination procedures	101.603 - Permissible communications	101.703 - Permissible communications
101.105 - Interference protection criteria		101.705 - Renewal of station licenses
101.107 - Frequency tolerance		
101.109 - Bandwidth		
101.111 - Emission limitations		
101.113 - Transmitter power		
101.115 - Directional antennas		
101.117 - Antenna polarization		
101.119 - Simultaneous use of common antenna structures		
101.121 - Marking of antenna structures		
101.123 - Quiet zones		
101.125 - Temporary fixed antenna height restrictions		
101.127 - Topographical data		
101.129 - Transmitter location		
101.131 - Transmitter construction and installation		
101.133 - Limitations on use of transmitters		
101.135 - Shared use of radio stations and the offering of private carrier service		
101.137 - Interconnection of private operational fixed point-to-point microwave stations		

SUBPART C TECHNICAL STANDARDS	SUBPART H PRIVATE OPERATIONAL FIXED POINT-TO-POINT MICROWAVE SERVICE	SUBPART I COMMON CARRIER FIXED POINT-TO-POINT MICROWAVE SERVICE
101.139 - Authorization of transmitters		
101.141 - Microwave modulation		
101.143 - Minimum path length requirements		
101.145 - Interference to geostationary-satellites		
101.147 - Frequency assignments		
101.149 - Special requirements for operation in the band 38,600-40,000 MHz		

PART 101

FIXED MICROWAVE SERVICES

Subpart A - General

Sec.

Subpart B - Applications and Licenses

General Filing Requirements

Processing of Applications

License Transfers, Modifications, Conditions and Forfeitures

Subpart C - Technical Standards

Subpart D - Technical Operation

Subpart E - Miscellaneous

Subpart F - Developmental Authorizations

Subpart G - Digital Electronic Message Service

Subpart H - Private Operational Fixed Point-to-Point Microwave Service

Subpart I - Common Carrier Fixed Point-to-Point Microwave ~~Radio~~ Service

Subpart J - Local Television Transmission Service

PART 101

Subpart A - General

§101.1 Scope and authority.

NO CHANGE.

§101.3 Definitions

Antenna power gain. The ~~square of the~~ ratio of the ~~root mean square free space field intensity produced at one mile in the horizontal plane, in millivolts per meter for one kilowatt antenna input power to 137.6mV/m. This ratio should be expressed in decibels (dB). (If specified for a particular direction, antenna power gain is based on the field strength in that direction only.)~~ maximum radiation intensity to that of an isotropic (omnidirectional) radiator in the far field of its main (forward direction) lobe.

Antenna power input. The radio frequency peak or RMS power, as the case may be, supplied to the antenna from the antenna transmission line and its associated impedance matching network.

Antenna structure. The antenna, its supporting structure and anything attached to it.

Assigned frequency. The center of the frequency band assigned to a station.

Assigned frequency bandwidth. The frequency band within which the emission of a station is authorized; the width of the band equals the necessary bandwidth plus twice the absolute value of the frequency tolerance.

Authorized bandwidth. The maximum bandwidth authorized to be used by a station as specified in the station license. (See §2.202)

Authorized frequency. The frequency, or frequency range, assigned to a station by the Commission and specified in the instrument of authorization.

Authorized power. The maximum power a station is permitted to use. This power is specified by the Commission in the station's authorization.

Automatic Transmitter Power Control (ATPC). ATPC is a feature of a digital microwave radio system that adjusts the transmitter output power. ATPC allows the transmitter to operate at less than maximum power for most of the time. In a radio employing ATPC, the transmit power is reduced during normal operation conditions. When the receiver detects a reduction in signal level, a control signal is sent to the far end transmitter, instructing it to increase the power output to compensate for the signal reduction. The power output is

limited to the licensed (maximum) transmit power. Guidelines for use of ATPC are set forth in the TIA Telecommunications Systems Bulletin TSB 10, "Interference Criteria for Microwave Systems (TSB 10)." This TSB 10 is contained in Appendix ___ of the [Part 101 Report and Order] and is printed in the Federal Register at ____. Copies of the current edition of TSB 10 are available for inspection at ____ or may be ordered from the Commission's copying contractor.

Bandwidth occupied by an emission. The band of frequencies comprising 99 percent of the total radiated power extended to include any discrete frequency on which the power is at least 0.25 percent of the total radiated power.

Bit rate. The rate of transmission of information in binary (two state) form in bits per unit time.

Carrier. In a frequency stabilized system, the sinusoidal component of a modulated wave whose frequency is independent of the modulating wave; or the output of a transmitter when the modulating wave is made zero; or a wave generated at a point in the transmitting system and subsequently modulated by the signal; or a wave generated locally at the receiving terminal which when combined with the side bands in a suitable detector, produces the modulating wave.

Carrier frequency. The output of a transmitter when the modulating wave is made zero.

Central office. A landline termination center used for switching and interconnection of public message communication circuits.

~~Point-to-point~~ Common carrier fixed point-to-point microwave ~~radio~~ service. A common carrier public radio service rendered on microwave frequencies by fixed and temporary fixed stations between points that lie within the United States or between points to its possessions or to points in Canada or Mexico.

Communication common carrier. Any person engaged in rendering communication service for hire to the public.

Control point. An operating position at which an operator responsible for the operation of the transmitter is stationed and which is under the control and supervision of the licensee.

Control station. A fixed station, the transmissions of which are used to control automatically the emissions or operations of a radio station, or a remote base station transmitter.

Coordination area. The area associated with a station outside of which another station sharing the same or adjacent frequency band neither causes nor is subject to interfering emissions greater than a permissible level.

Coordination contour. The line enclosing the coordination area.

Coordination distance. The distance on a given azimuth from a station beyond which another station neither causes nor is subject to interfering emissions greater than a permissible level.

Digital Electronic Message Nodal Station. A fixed point-to-multipoint radio station in a Digital Electronic Message Service providing two-way communication with Digital Electronic Message User Stations.

Digital Electronic Message Service. A two-way end-to-end fixed radio service utilizing digital termination systems for the exchange of digital information. This service may also make use of point-to-point microwave facilities, satellite facilities or other communications media to interconnect digital termination systems to comprise a network.

Digital Electronic Message User Station. Any one of the fixed microwave radio stations located at users' premises, lying within the coverage area of a Digital Electronic Message Nodal Station, and providing two-way digital communications with the Digital Electronic Message Nodal Station.

Digital modulation. The process by which some characteristic (frequency, phase, amplitude or combinations thereof) of a carrier frequency is varied in accordance with a digital signal, e.g. one consisting of coded pulses or states.

Drop point. A term used in the point-to-point microwave radio service to designate a terminal point where service is rendered to a subscriber.

Earth station. A station located either on the Earth's surface or within the major portion of Earth's atmosphere and intended for communication with one or more space stations or with one or more stations of the same kind by means of one or more reflecting satellites or other objects in space.

Effective radiated power (ERP). The product of the power supplied to the antennas and its gain relative to a half-wave dipole in a given direction.

Equivalent Isotropically Radiated Power (EIRP). The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna.

Exchange. A unit of a communication company or companies for the administration of communication service in a specified area, which usually embraces a city, town, or village and its environs, and consisting of one or more central offices, together with the associated plant, used in furnishing communication service in that area.

Exchange area. The geographic area included within the boundaries of an exchange.

Fixed satellite earth station. An earth station intended to be used at a specified fixed point.

Fixed relay station. A fixed station associated with one or more stations, established to receive radio signals directed to it and to retransmit them automatically on a fixed service frequency.

Fixed Service. A radiocommunications service between specified fixed points.

Fixed station. A station in the fixed service.

Frequency tolerance. The maximum permissible departure by the center frequency of the frequency band occupied by an emission from the assigned frequency or, by the characteristic frequency of an emission from the reference frequency.

NOTE: The frequency tolerance is expressed in parts in 10^6 or in hertz.

General communication. Two-way voice communication, through a base station, between (1) a common carrier land mobile or airborne station and a landline telephone station connected to a public message landline telephone system, or (2) two common carrier land mobile stations, or (3) two common carrier airborne stations, or (4) a common carrier land mobile station and a common carrier airborne station.

Harmful interference. Interference that endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs or repeatedly interrupts a radiocommunication service operating in accordance with these Regulations.

Internodal link. A point-to-point communications link used to provide communications between Nodal Stations or to interconnect Nodal Stations to other communications media.

Landing area. A landing area means any locality, either of land or water, including airports and intermediate landing fields, which is used, or approved for use for the landing and take-off of aircraft, whether or not facilities are provided for the shelter, servicing, or repair of aircraft, or for receiving or discharging passengers or cargo.

Local Television Transmission Service. A public radio communication service for the transmission of television material and related communications.

Long haul system. A microwave system licensed under this Part in which the longest radio circuit of tandem radio paths exceeds 402 kilometers (250 miles).

Master station. A station in a multiple address radio system that controls, activates or interrogates four or more remote stations. Master stations performing such functions may also receive transmissions from remote stations.

Message center. The point at which messages from members of the public are accepted by the carrier for transmission to the addressee.

Microwave frequencies. As used in this part, this term refers to frequencies of 890 MHz and above.

Microwave link. A link is defined as a simplex communications circuit between two points utilizing a single frequency/polarization assignment. A duplex communications circuit would require two links, one link in each direction.

Miscellaneous common carriers. Communications common carriers that are not engaged in the business of providing either a public landline message telephone service or public message telegraph service.

Mobile earth station. An earth station intended to be used while in motion or during halts at unspecified points.

Mobile Service. A radiocommunication service between mobile and land stations or between mobile stations.

Mobile station. A station in the mobile service intended to be used while in motion or during halts at unspecified points.

Multiple address system (MAS). A point-to-multipoint radio communications system, either one-way or two-way, utilizing frequencies listed in Section ~~101.605~~ 101.147 and serving a minimum of four unique remote stations. Each master station must serve at least its own four remotes operating on its assigned frequency. The remote stations must be scattered over the service area in such a way that two or more point-to-point systems would be needed to serve those remotes.

Necessary bandwidth. For a given class of emission, the width of the frequency band that is just sufficient to ensure the transmission of information at the rate and with the quality required under specified conditions. The necessary bandwidth may be calculated using the formulas in §2.202 of this Chapter.

Nodal station. The central or controlling station in a radio system operating on point-to-multipoint frequencies in the 2.5, 10.6, or 18 GHz bands.

Occupied bandwidth. The width of a frequency bandwidth such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage, B/2 of the total mean power of a given emission. Unless otherwise specified by the CCIR for the appropriate class of emission, the value of B/2 should be taken as 0.5%.

Note: The percentage of the total power outside the occupied bandwidth is represented by B.

Operational fixed station. A private fixed station not open to public correspondence.

Passive repeater. A re-radiation device ~~located in the far field of~~ associated with a transmitting/receiving antenna system that re-directs intercepted radiofrequency energy. For example, it may consist of reflector(s) or back-to-back parabolic or horn antennas.

Path Length. The total distance of a path from the transmit to the receive antenna, inclusive of all passive repeaters, if any.

Periscope antenna system. An antenna system ~~that re-directs intercepted radio frequency energy consisting of an active portion and a reflector which is located in the near field or transition field (i.e., within several hundred meters) of the active portion.~~ which involves the use of a passive reflector to deflect radiation from or to a directional transmitting or receiving antenna which is oriented vertically or near vertically.

Prior coordination. A bilateral process conducted prior to filing applications which includes the distribution of the technical parameters of a proposed radio system to potentially affected parties for their evaluation and timely response.

~~Point-to-point microwave radio service. A common carrier public radio service rendered on microwave frequencies by fixed and temporary fixed stations between points that lie within the United States or between points to its possessions or to points in Canada or Mexico.~~

Private carrier. An entity licensed in the private service and authorized to provide communications service to other private service eligibles on a commercial basis.

Private line service. A service whereby facilities for communication between two or more designated points are set aside for the exclusive use or availability for use of a particular customer and authorized users during stated periods of time.

Private operational fixed point-to-point microwave service. A private line radio service rendered on microwave frequencies by fixed and temporary fixed stations between points that lie within the United States or between points to its possessions or to points in Canada or Mexico.

Public correspondence. Any telecommunication which the offices and stations must, by reason of their being at the disposal of the public, accept for transmission.

Public message service. A service whereby facilities are offered to the public for communication between all points served by a carrier or by interconnected carriers on a

non-exclusive message by message basis, contemplating a separate connection for each occasion of use.

Radio station. A separate transmitter or a group of transmitters under simultaneous common control, including the accessory equipment required for carrying on a radiocommunication service.

Radiocommunication. Telecommunication by means of radio waves.

Rated power output. The maximum radio frequency power output capability (peak or average power) of a transmitter, under optimum conditions of adjustment and operation, specified by its manufacturer.

Record communication. Any transmission of intelligence which is reduced to visual record form at the point of reception.

Reference frequency. A frequency coinciding with or having a fixed and specified relation to the assigned frequency. This frequency does not necessarily correspond to any frequency in an emission.

Relay station. A fixed station used for the reception and retransmission of the signals of another station or stations.

Remote station. A fixed station in a multiple address radio system that transmits one-way to one or more central receive sites, controls a master station, or is controlled, activated or interrogated by, and may respond to, a master station.

Repeater station. A fixed station established for the automatic retransmission of radiocommunications received from one or more mobile stations and directed to a specified location; for public mobile radio operations, a fixed station that automatically retransmits the mobile communications and/or transmitter information about the base station, along a fixed point-to-point link between the base station and the central station.

Short haul system. A microwave system licensed under this Part in which the longest radio circuit of tandem radio paths does not exceed 402 kilometers (250 miles).

Signaling communication. One-way communications from a base station to a mobile or fixed receiver, or to multi-point mobile or fixed receivers by audible or subaudible means, for the purpose of actuating a signaling device in the receiver(s) or communicating information to the receiver(s), whether or not the information is to be retained in record form.

Standby transmitter. A transmitter installed and maintained for use in lieu of the main transmitter only during periods when the main transmitter is out of service for maintenance or repair.

Symbol rate. Modulation rate in bauds. This rate may be higher than the transmitted bit rate as in the case of coded pulses or lower as in the case of multilevel transmission.

Telegraphy. A form of telecommunication which is concerned in any process providing transmission and reproduction at a distance of documentary matter, such as written or printed matter or fixed images, or the reproduction at a distance of any kind of information in such a form. Unless otherwise specified, telegraphy means a form of telecommunication for the transmission of written matter by the use of signal code.

Telemetering. The use of telecommunication for automatic indicating or recording measurements at a distance from the measuring instrument.

Telephony. A form of telecommunication set up for the transmission of speech, or in some cases, other sounds.

Television. A form of telecommunication for transmission of transient images of fixed or moving objects.

Temporary fixed station. A station established in a non-permanent mode (temporary) at a specified location for a short period of time, ranging up to one year. Temporary-fixed operations are itinerant in nature, and are not to be confused with mobile-type operations.

Video entertainment material. The transmission of a video signal (e.g. United States Standard Monochrome or National Television Systems Committee 525-line television) and an associated audio signal which is designed primarily to amuse or entertain, such as movies and games.

Subpart B: Applications and Licenses

GENERAL FILING REQUIREMENTS

§101.4 Transition period.

(a) All systems subject to Parts 21 and 94 of the Rules, which are licensed or which are proposed in an application on file, as of the effective date of this part, can meet the requirements under Part 21 or Part 94, as applicable, indefinitely.

(b) For purposes of this section, a "system" shall include:

(i) the originally licensed system;

(ii) any modification to the original system involving a change in antenna azimuth, antenna beam width, channel loading, emission, station location, antenna height, authorized power, or authorized frequencies;

(iii) additional links constructed to complete an integrated communications network; or

(iv) operationally connecting new facilities and/or frequencies.

§101.5 Station authorization required.

(a) No radio transmitter shall be operated in this service except under and in accordance with a proper station authorization granted by the Federal Communications Commission. Except as provided in paragraph (d) of this section, no construction or modification of a station may be commenced without an authorization from the Commission.

(b) A separate application form must be filed for each Digital Electronic Message Service Nodal Station. No license is required for a Digital Electronic Message User Station. Authority for a Digital Electronic Message Nodal Station licensee to serve a specific number of user stations to be licensed in the name of the carrier must be requested on FCC Form 494 filed for the Digital Electronic Message Nodal Station.

(c) If construction and or operation may have a significant environmental impact as defined by Sec. 1.1307 of the Commission's rules, the requisite environmental assessment as prescribed in Sec. 1.1311 of this chapter must be filed with the application and Commission environmental review must be completed before construction of the station is initiated. See §1.1312 of this chapter.

(d) For stations authorized under Subpart H (Private Operational Fixed ~~Radio~~ Point-to-Point Microwave Service) and Subpart I (Common Carrier Fixed Point-to-Point Microwave

Service), construction, but not operation, of new or modified stations may be initiated prior to grant of an authorization.

§101.7 Eligibility for station license.

NO CHANGE.

§101.9 Formal and informal applications.

NO CHANGE.

§101.11 Filing of applications, fees, and number of copies.

NO CHANGE.

§101.13 Application forms and requirements ~~for private operational fixed stations~~.

(a) A separate application must be submitted on FCC Form ~~402~~ [redacted] for the following:

(1) New station ~~authorization for private operational fixed microwave station.~~ authorization.

(2) New authorization to operate one or more fixed stations at temporary locations in this service.

(3) Modification of station license.

(4) New station authorization or modification of license for each master station of a system consisting of a master station and its associated remote stations.

(5) The Commission's consent to the complete or partial assignment of an authorization to another person or ~~entity.~~ entity, or the transfer of control of an entity holding an authorization. In addition, the application must be accompanied by a signed letter from proposed ~~assignor~~ assignor/transferor stating the desire to assign all or part of its right, title, and interest in and to such authorization, or to transfer control over the entity holding the authorization, stating the call sign and location of the station, and that, if applicable, the assignor will submit its current station authorization for cancellation upon completion of the assignment. Form ~~1046~~ [redacted] may be used in lieu of this letter. Such assignment or transfer of control must be consummated within 45 days from the date of Commission approval, and the Commission must be notified by letter of the date of consummation within 10 days of its occurrence.

(6) Amendment of any application.